Nova Computing Curriculum

Intent

At Nova we understand the immense value that technology plays not only in supporting the Computing and whole school curriculum but overall in the day-to-day life of our school. Our aims are to fulfil the requirements of the National Curriculum for Computing whilst also providing enhanced collaborative learning opportunities, engagement in rich content and supporting pupil's conceptual understanding of new concepts which support the needs of all our pupils. We also recognise that in an ever increasing digital world, children need a solid understanding of the positive and negative aspects of being online. To this end, we deliver E-Safety as a weekly lesson throughout the year.

Our Computing curriculum and teaching has links with mathematics, science and design and technology and our aim is to provide a broad and balanced curriculum whilst ensuring that pupils become digitally literate and digitally resilient. Technology is ever evolving and we aim to develop pupils who can use and express themselves, develop their ideas through, information and communication technology at a suitable level for the future workplace and as active participants in a digital world.

The aims of our Computing and Keeping Safe curriculum are to develop pupils who:

- Are responsible, competent, confident and creative users of information and communication technology.

- Know how to keep themselves safe whilst using technology and on the internet and be able to minimise risk to themselves and others.

- Become responsible, respectful and competent users of data, information and communication technology.

- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.

- Can analyse problems in computational terms, and have repeated practical experience writing computer programs in order to solve such problems.

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.

- Become digitally literate and are active participants in a digital world.

- Are equipped with the capability to use technology throughout their lives.

- Understand the importance of governance and legislation regarding how information is used, stored, created, retrieved, shared and manipulated.

- Have a 'can do' attitude when engaging with technology and its associated resources.

- Utilise computational thinking beyond the Computing curriculum.

- Understand and follow E-Safety rules.

- Understand the E-Safety messages can keep them safe online.

- Know who to contact if they have concerns.

Implementation

To ensure high standards of teaching and learning in computing, we implement a curriculum that is progressive throughout the whole school. Our implementation of the computing curriculum is in line with 2014 Primary National Curriculum requirements for KS1 and KS2 and the Foundation Stage Curriculum in England. This provides a broad framework and outlines the knowledge and skills taught in each key stage. We use and follow the Purple Mash scheme of work from Year 1-6, ensuring consistency and progression throughout the school. The Purple Mash scheme of work enables clear coverage of the computing curriculum whilst also providing support and CPD for less confident teachers to deliver lessons. The Purple Mash Lessons are broken down into weekly units. Units are practical and engaging and allow computing lessons to be hands on. Units cover a broad range of computing components such as coding, spreadsheets, Internet and Email, Databases, Communication networks, touch typing, animation and online safety.

Through our Purple Mash subscription our teachers can deliver thematic, cross curricular lessons that also follow children's interests and provide flexibility. Purple Mash has an online portal of age appropriate software, games and activities as well as topic materials and materials to support children's learning in other subject areas for all key stages. Computing teaching is practical and engaging and a variety of teaching approaches and activities are provided based on teacher judgement and pupil ability. Teachers and pupils are aware of the importance of health and safety and pupils are always supervised when using technology and accessing the internet. Our pupils are fully encouraged to engage with ICT and technology outside of school. Each teacher and pupil at has their own unique Purple Mash login and password. Computing work can be stored and saved using pupil log in details and homework or '2do's' can also be set for pupils to access and complete tasks at home that link with their current class learning.

Computing and safeguarding go hand in hand and we provide a huge focus on internet safety inside and outside of the classroom. Additional to all pupils taking part in a weekly online safety lesson, every year we also take part in National Safer Internet Day in February. The Computing subject leader, alongside class teachers, will plan additional internet safety lessons and activities.

Our weekly esafety (Keeping Safe) lesson is based upon the materials in the Education for a Connected World programme and is a structured, progressive scheme that delivers materials through eight key areas. The materials available allow staff to pose key questions and promote a dialogue with the children. The lessons are designed to provide a safe space to allow children to discuss their understanding of topics and to pose questions that they may have. An example breakdown of unit delivery is shown later in this document.

Impact

Our Computing Curriculum is high quality, well thought out and is planned to demonstrate progression and build on and embed current skills. Children become increasingly proficient on school equipment and have good, transferable knowledge and understanding of online safety which is transferred into their own lives. Through Purple Mash and education for a Connected World, children have a broad base of transferable knowledge which can be used on other similar platforms. Pupil voice, subject monitoring and lesson observations all ensure a positive impact of computing as a subject.

Computing in the 'Ambitions' curriculum

With the blocking of subjects with the Ambitions curriculum, the following assumptions have been made:

- E-safety is now taught within the Keeping Safe curriculum
- Computing will be taught half-termly across six weeks.
- Within the half term of Computing, approximately six afternoon sessions will be dedicated to Computing teaching (approximately 6-7 hours teaching time)
- We will select Purple Mash units that will fulfil the Computing programme of study across the Key Stage
- Each Purple Mash lesson takes 1 hour
- A total of six weeks blocked Computing teaching will occur each year (approximately 18-20 hours)

Each Purple Mash units contains all of the resources that are required to cover the unit – slideshows, worksheets and online activities.

Key stage 1 Programme of Study

Pupils should be taught to do the following (predominant area of Computing shown in colour key)

◻ understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. 🟥

◻ create and debug simple programs 🟥

◻ use logical reasoning to predict the behaviour of simple programs 🟥

◻ use technology purposefully to create, organise, store, manipulate and retrieve digital content 🟦

◻ recognise common uses of information technology beyond school 🟨

◻ use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies **(also delivered in Keeping Safe)** 🟨

🟥	Computer Science
🟦	Information Technology
🟨	Digital Literacy

Key stage 1 delivery

Term	Purple mash unit	Number of lessons	Predominant area of Computing
Y1 Autumn term	• Grouping and sorting (Unit 1.2)	2	
	• Pictograms (Unit 1.3)	3	
	• Technology outside of school (unit 1.9)	2	
Y1 Spring term	• Maze explorers (Unit 1.5)	3	
	• Spreadsheets (Unit 1.8)	3	
Y1 Summer term	• Coding (Unit 1.7)	6	
Y2 Autumn term	• Creating Pictures (unit 2.6)	5	
Y2 Spring term	• Spreadsheets (Unit 2.3)	4	
	• Making Music (Unit 2.7)	3	
Y2 Summer term	• Coding (Unit 2.1)	6	

Key stage 2 Programme of Study

Pupils should be taught to do the following (predominant area of Computing shown in colour key)

design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ■

☐ use sequence, selection, and repetition in programs; work with variables and various forms of input and output ■

☐ use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs ■

☐ understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration ■

☐ use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content **(also delivered in Keeping Safe).** ■

☐ select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information ■

☐ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **(also delivered in Keeping Safe).** ■

■	Computer Science
■	Information Technology
■	Digital Literacy

Key stage 2 delivery

Term	Purple mash unit	Number of lessons	Predominant area of Computing
Y3 Autumn term	• Coding (Unit 3,1)	6	(red)
Y3 Spring term	• Spreadsheets (Unit 3.3)	3	(blue)
	• Simulations (Unit 3.7)	3	(blue)
Y3 Summer term	• Email (Unit 3.5)	6	(yellow)
Y4 Autumn term	• Coding (Unit 4.1)	6	(red)
Y4 Spring term	• Spreadsheets (Unit 4.3)	6	(blue)
Y4 Summer term	• Animation (Unit 4.6)	3	(blue)
	• Logo (Unit 4.5)	4	(red)
Y5 Autumn term	• Coding (Unit 5.1)	6	(red)

Alignment to the National Curriculum KS2

Y5 Spring term	• Game creator (Unit 5.5)	5	
Y5 Summer term	• Databases (Unit 5.4)	5	
Y6 Autumn term	• Coding (Unit 6.1)	6	
Y6 Spring term	• Spreadsheets (Unit 6.3)	5	
Y6 Summer term	• Blogging (Unit 6,4)	4	
	• Networks (Unit 6.6)	3	

'KEEPING SAFE' YEAR GROUP PLANS - EYFS

Self-Image and Identity	Online Relationships	Online Reputation	Online Bullying
Managing Online Information	Health, Well-being and Lifestyle	Privacy and Security	Copyright and Ownership

Week	EYFS
1	I can recognise, online or offline, that anyone can say 'no' - 'please stop' - 'I'll tell' - 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset.
2	
3	I can recognise some ways in which the internet can be used to communicate.
4	
5	
6	I can give examples of how I (might) use technology to communicate with people I know
7	
8	
9	I can identify ways that I can put information on the internet.
10	

18	I can offer examples of how this can make others feel
19	
20	
21	I can talk about how to use the internet as a way of finding information online.
22	
23	
24	I can identify devices I could use to access information on the internet.
25	
26	
27	I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location).
28	